MARICOPA COUNTY

Vector-Borne & Zoonotic Disease

OFFICE OF EPIDEMIOLOGY OCTOBER 2009

SPECIAL POINTS OF INTEREST:

- **Unpasteurized dairy products: What's in the cheese?**
- **West Nile Virus arrives in Maricopa County**
- **Hantavirus claims four lives**
- **Tick and mosquito exposures cause illness in many residents**

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In the News: Rabies

Rabies is a deadly zoonotic disease caused by a virus that attacks the central nervous system and causes acute, progressive encephalomyelitis that is almost always fatal. It is transmitted when saliva of an infected animal is passed to an uninfected animal through a bite, scratch, abrasion, open wound or mucous membrane contaminated with saliva or other potentially infectious material (such as brain tissue or cerebrospinal fluid) from a rabid animal.

Bats, skunks, foxes, raccoons, bobcats, and coyotes serve as important reservoirs for the disease. Cats, dogs and livestock can also become infected with rabies if they have not been vaccinated and are bitten by rabid wild animals. As a result of animal control and vaccination programs and the development of effective human rabies vaccines and immunoglobulins, there has not been a case of rabies in a human since 1981in Arizona. Furthermore, there has not been a rabid dog in Maricopa County since 1974 or a rabid cat since 1982; making domestic animals, such as dogs and cats low risk for rabies transmission in our county.

From 2003 and 2007 there were 61 confirmed cases of rabies in wild animals in Maricopa County. Out of the 61 cases, 90% were bats, 5% were foxes, and 5% were bobcats.

	2003	2004	2005	2006	2007
Bat	10	9	11	9	16
Fox	1	2	0	0	0
Bobcat	0	1	1	0	1
Total	**11**	**12**	**12**	**9**	**17**

During the same time period, Maricopa County Department of Public Health (MCDPH) conducted hundreds of rabies risk assessments for humans that came into contact with potentially rabid animals. In the event of a valid exposure, rabies is 100% preventable in humans with post-exposure prophylaxis (PEP). MCDPH works in collaboration with Arizona Department of Health Services (ADHS), Maricopa County Animal Care and Control and Arizona Game and Fish Department to coordinate rabies activities. In 2006, MCDPH developed and initiated a comprehensive surveillance system that tracks the number of rabies risk assessments conducted, the type of exposure, the risk factors involved, and the number of individuals administered PEP.

A rabid bobcat received a lot of media attention in Arizona after running into a bar in Yavapai County in March 2009.

Report ALL suspected rabies cases and ALL animal bites!

MCDPH can conduct a rabies risk assessment and assess if rabies vaccination is needed. There is no cure for rabies after the onset of symptoms and death is expected within days of symptom onset. In high risk exposure situations rabies can be prevented by administration of post-exposure prophylaxis .

To report a suspected rabies case or to receive a rabies risk assessment::
Monday—Friday 8 a.m. to 5 p.m.:
(602) 420-2839

Holidays and After Hours:
(602) 747-7111

To report an animal bite to Maricopa County Animal Care and Control:
24 hours/day:
(602) 506-7387

Surveillance Terminology

The Office of Epidemiology collects, analyzes and distributes public health data to MCDPH programs and to external organizations and individuals seeking information on disease in Maricopa County.

We work in collaboration with other MCDPH divisions, such as Community Health Nursing, and the Office of Preparedness and Response, and other entities, such as the Maricopa County Department of Environmental Services to carry out the following activities:

- Investigate and respond to disease outbreaks. Outbreaks can be caused by the consumption of contaminated food or water, by exposure to infected persons or animals, or by other means. Investigations may include requesting restaurant or other site inspections, interviewing patients and contacts, obtaining medical records and specimens, reviewing laboratory results, analyzing statistical data and other tasks.
- Track and investigate communicable disease cases and participate in implementing interventions to stop the spread of disease. Implementation strategies may include education, immunization, quarantine, preventive treatment and others.
- Plan for and respond to public health emergencies (e.g. avian influenza, serious weather conditions, and intentional acts).

The first step in investigating disease outbreaks is to review the evidence (i.e., medical records, laboratory reports, etc.). After reviewing all of the evidence on a case, the next step is to assess whether or not the case meets the case definition for the disease being investigated. Case definitions are determined by the Arizona Department of Health Services and the Centers for Disease Control and Prevention with input from all Arizona county health departments. It is important to note that our investigation is for surveillance purposes only and is not used for diagnostic purposes. All surveillance information on patients is confidential and no identifying information is not used in this report or any other report by MCDPH. Throughout the following disease reports, cases will be defined as confirmed, probable, or suspect. These terms differ for each disease, however, the following definitions will be helpful in providing a general understanding of epidemiological terms used throughout this document.

Case—a person identified as having the particular disease, health disorder, or condition under investigation.

Confirmed—a case that is laboratory confirmed and clinically compatible.

Endemic—the constant presence of a disease or infectious agent within a given geographic area or population group.

Epidemic—the occurrence in a community or region of cases of an illness, specific health-related behavior, or other health-related events clearly in excess of normal expectancy.

Probable—a case that is clinically compatible, however; due to testing limitations, laboratory testing may be insufficient or invalid.

Suspect —a case that is thought to be a particular disease based upon symptoms or laboratory findings.

Psittacosis

Psittacosis is an acute generalized chlamydial disease caused by the bacterium, *Chlamydia psittaci.* Primarily an infection of birds in the parrot family (e.g., parakeets, macaws, parrots), less often in poultry, it can be transmitted to humans through inhalation of droppings, secretions and dust from feathers of infected birds. Infected birds are often asymptomatic, but Psittacosis can cause fever, chills, headache, myalgias, rash, and upper or lower respiratory tract infections in humans. In addition, more severe complications such as pneumonia, thrombophlebitis, hepatitis, endocarditis, myocarditis, and encephalitis often occur if untreated. Bird owners, veterinarians, pet shop employees, and poultry processing plant workers are at risk for developing Psittacosis. About 50 confirmed cases are reported each year in the U.S., but it is believed that many more cases of Psittacosis occur that are not correctly diagnosed or reported. Diagnosis of psittacosis can be difficult due to lack of specific laboratory testing and antibiotic treatment may prevent an antibody response, which limits diagnosis by serology. Treatment with tetracycline or doxycycline for two to three weeks is usually sufficient to prevent relapse. From 2003 to 2007, there were two suspect cases of Psittacosis reported to Maricopa County. Upon investigation, one case was probable. The probable case occurred in 2003 in a female that had exposure to several pet parakeets and chickens in her home.

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Tularemia

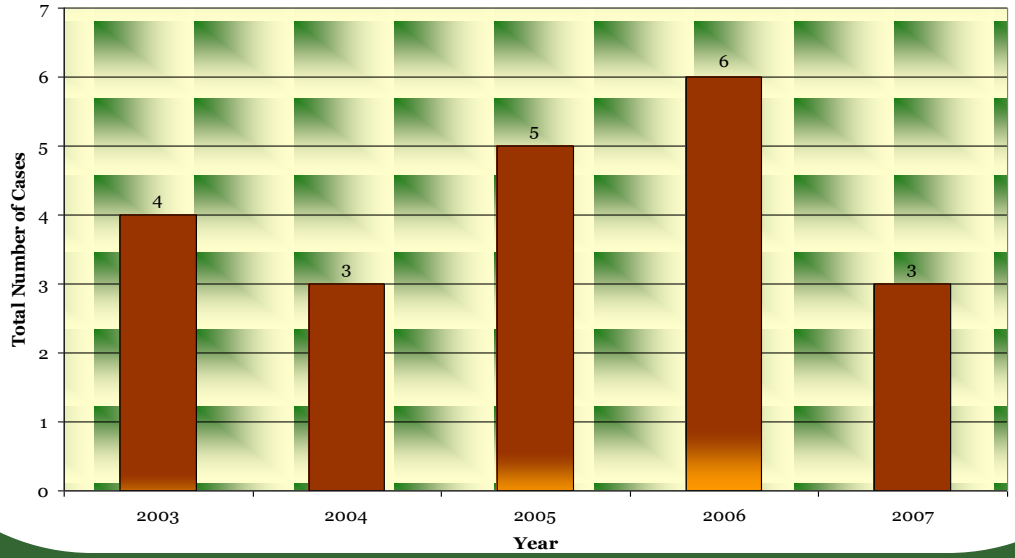
Tularemia is a potentially serious illness caused by the bacterium, *Francisella tularensis*, found throughout North America primarily in rabbits, hares, beavers, voles, and muskrats. The bacteria can be transmitted to humans through the bite of an infected arthropod (i.e., wood tick, dog tick, lone star tick, deer fly), handling of infected animal carcasses, drinking contaminated water, handling or eating undercooked meat of infected animals, inhaling dust from contaminated soil, grain or hay, and handling sick pets or exotic animals (i.e., dogs, cats, hamsters, monkeys, prairie dogs). Symptoms usually appear within 3-5 days after exposure, but onset of symptoms can range from 1-14 days. The sudden onset of influenza-like illness, which includes a sudden high fever, chills, fatigue, headache, nausea, and myalgias is the common symptom. Most often there is a skin ulcer at the site where the bacteria entered, swelling of the regional lymph nodes and development of pneumonia. If the route of entry was through contaminated food or water, abdominal pain, diarrhea, vomiting, and pharyngitis commonly occur. Tularemia is treated with a course of antibiotics, usually streptomycin or tetracycline, however, once daily gentamycin has been shown to be an effective alternative to streptomycin. From 2003 to 2007, there were 11 suspect cases of Tularemia reported to Maricopa County. Upon investigation, one case was confirmed. The confirmed case occurred in 2006 in a 14-year-old male with unidentified exposure.

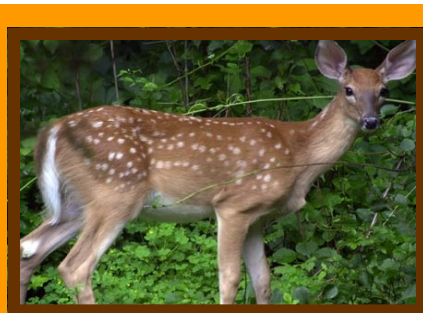
Brucellosis

Brucellosis is a systemic infectious bacterial disease caused by the *Brucella* genera that affects many vertebrate species including dogs, sheep, pigs, bison, goats, cattle, and deer. In the United States, however, the major concern is with cattle, bison and swine. The bacteria is more prominently found in South and Central America, Eastern Europe, Asia, Africa, the Caribbean, the Middle East, and the Mediterranean basin which includes Portugal, Southern France, Italy, Greece, Turkey, and North Africa. In the United States most humans contract the disease through direct contact with aborted fetuses, afterbirth, and uterine discharges of diseased animals or with infected carcasses at slaughter. World-wide transmission to humans through consumption of infected animals or animal products such as unpasteurized milk and cheese have in recent history been the most common way to contract the disease; however, individuals may also become infected through inhalation or contamination of skin wounds. Inhalation, while not common in the general population, is a potential concern in laboratory workers and those working in slaughterhouses. Transmission via contamination of skin wounds should be considered in hunters as well as slaughterhouse workers. Although very uncommon, transmission may also occur through breast feeding or sexual activity in which there is a transmission of fluids. As a result, groups at risk for brucellosis infection include abattoir workers, meat inspectors, animal handlers, veterinarians, and laboratory workers. The disease usually presents with flu-like symptoms including fever, sweats, headaches, back pains, chills, arthralgias, depression, weight loss, and weakness. Severe infections may also affect the liver, spleen, CNS or the heart. Treatment is with a multi-drug antibiotic approach usually including doxcycline for 6 weeks in addition to either rifampin for 6 weeks or streptomycin for 2 to 3 weeks.

From 2003 to 2007, there were 64 suspect cases of Brucellosis reported to Maricopa County. Upon investigation, 21 cases were found to be confirmed or probable, shown in the figure below by year. The majority of cases had been exposed through direct exposure to animals or consumption of unpasteurized cheese from Mexico.

Brucellosis Cases in Maricopa County, 2003-2007





Ehrlichiosis

Ehrlichiosis is a general name for a group of acute, febrile, bacterial illnesses, caused by bacteria from the *Anaplasmataceae* family. The disease is transmitted to humans through bites from an infected tick. Most cases in the United States are transmitted by the lone star tick, which is primarily found in the southern, eastern and south-central United States. There are two ehrlichial species that cause disease in humans in the United States: *Ehrlichia chaffeensis* and *Ehrlichia ewingii*. Most people will develop symptoms within 7-14 days after exposure to an infected tick. Early symptoms are non-specific and include fatigue, fever, headache, myalgias, arthralgias, nausea, vomiting, diarrhea, cough confusion and rash. Infections can range from mild to severe, with 20% of cases developing meningoencephalitis. Current treatment is doxycycline twice daily for 5-10 days.

Although Ehrlichiosis is not present in Arizona, there are still cases in residents who have traveled to an endemic area or relocated to Arizona from an endemic area. From 2003 and 2007, there were five suspect cases of Ehrlichiosis reported to Maricopa County. Upon investigation, one case was found to be probable, and one was confirmed. The probable case occurred in 2004 in a female with unknown exposure. The confirmed case occurred in 2005 in a male that had been vacationing in a cabin in Minnesota and fell ill while in Minnesota.

Rocky Mountain Spotted Fever

Rocky Mountain Spotted Fever (RMSF) is a seasonal disease caused by the bacteria *Rickettsia rickettsii*. Most cases of RMSF occur in the southeast and south central regions of the United States between the months of April and September; however, RMSF is also found in Northern Arizona during the same months. The bacteria is transmitted to humans through the bite of an infected tick, most commonly the American dog tick *(Dermacentor variabilis)* or Rocky Mountain wood tick *(Dermacentor andersoni)* . Symptoms usually present in 3-14 days usually with a sudden onset of moderate to high fever, significant malaise, deep muscle pain, severe headache, chills and conjunctival infection. A maculopapular rash usually appears on the extremities by the 3rd to 5th day and spreads rapidly to the trunk of the body. With prompt treatment death is rare, however, in recent times the fatality rate in the United States has ranged from 3-5%. Current treatment is with doxycycline twice daily for 5-10 days, however, chloramphenicol may be used as an effective alternative.

Although RMSF is not present in Maricopa County, there are still cases in residents who have traveled to an endemic area or moved from an endemic area. From 2003 to 2007, there were 55 suspect cases of RMSF reported to Maricopa County. Upon investigation, six cases were found to be probable. In 2004 there was one probable case in a male with unknown exposure. In 2006, there were three probable cases in a male that had recently relocated to Arizona from Louisiana with unknown exposure, a female with tick exposure in Missouri, and a female with unknown exposure. In 2007, there were two probable cases in a female with unknown exposure in North Carolina and a male with recent travel to northern Arizona.

West Nile Virus

WNV is transmitted by the Culex mosquito, seen here laying eggs.

West Nile virus (WNV) is a mosquito-borne virus that causes a non-specific, self-limited, febrile illness. Mosquitoes become infected when they feed on infected birds that have migrated into an area. The mosquitoes then bite people who may or may not become infected. The cycle of WNV occurs at an unusually high intensity when there is both a large number of infected birds and a high concentration of infected mosquitoes in a relatively small geographic area. Mosquitoes are the known carriers (vectors) of the virus from the host birds to humans. Humans and animals (i.e., horses) are incidental hosts in this bird -mosquito cycle. Because WNV causes death in birds, we expect dead birds to be the first warning of WNV activity in an area.

WNV is widespread in Africa, North America, Europe, the Middle East, India, southeast Asia, Australia, the Caribbean and Central and South America. Although it is now widespread in the United States, WNV was not present in Arizona until 2003. WNV is now endemic in Maricopa County and is expected to be a public health concern indefinitely. WNV surveillance season begins April 1st and ends November 30th, however, in Arizona the majority of cases occur between the months of June and October, with cases as early as January and as late as November. All residents and visitors are urged to continue to take precautions against WNV infection every year.

The majority (~80%) of people infected with WNV will show no symptoms at all. For those that are symptomatic (~20%), symptoms will appear 2-14 days after receiving the mosquito bite. Symptomatic cases are characterized by the acute onset of fever, headache, arthralgias, myalgias, and sometimes accompanied by a maculopapular rash or lymphadenopathy. Rarely do symptoms get more severe; however 1-3% of symptomatic infections will develop into a neuroinvasive form of the disease. In neuroinvasive West Nile Virus, the central nervous system (CNS) is involved and clinical syndromes ranging from meningitis (inflammation of the lining of the brain and spinal cord) to encephalitis inflammation of the brain), or acute paralysis can occur. There is no treatment for WNV only supportive care can be given.

From 2003 to 2007, there were 938 suspect cases of WNV reported to Maricopa County. Upon investigation, 582 cases were found to be probable or confirmed, shown in the figure on the following page by year. The large majority of cases occurred in 2004 when WNV made its entrance into Maricopa County. Prior to 2004, there were a few cases of WNV among Maricopa County residents, however, all cases were acquired outside of Maricopa County.

When dealing with WNV, prevention is best. Residents should avoid mosquito bites by using insect repellent, wearing light-colored long pants and long-sleeved shirts to cover exposed skin, limiting outside exposure during the evening hours when mosquito activity is at its highest, and eliminating mosquitoes inside the home. It is also very important to reduce the amount of mosquitoes around the home by ridding your backyard of standing water. The most common places water accumulates includes old tires, buckets, wheelbarrows, gutters and pet dishes. Residents should empty plastic wading pools, birdbaths, plant pots or drip trays every four to five days and drain standing puddles, ditches, tree holes or tree stumps. All swimming pools and decorative ponds and fountains should be clean and operational. Finally, residents should fix or install window and door screens around their homes, properly maintain their evaporative coolers and avoid over-watering their lawns.

WNV Case Classifications

Fever: A non-specific, self-limited, febrile illness caused by infection with West Nile virus. Typical cases are characterized by the acute onset of fever, headache, arthralgias, myalgias, and fatigue. Maculopapular rash and lymphadenopathy are generally observed in less than 20% of cases.

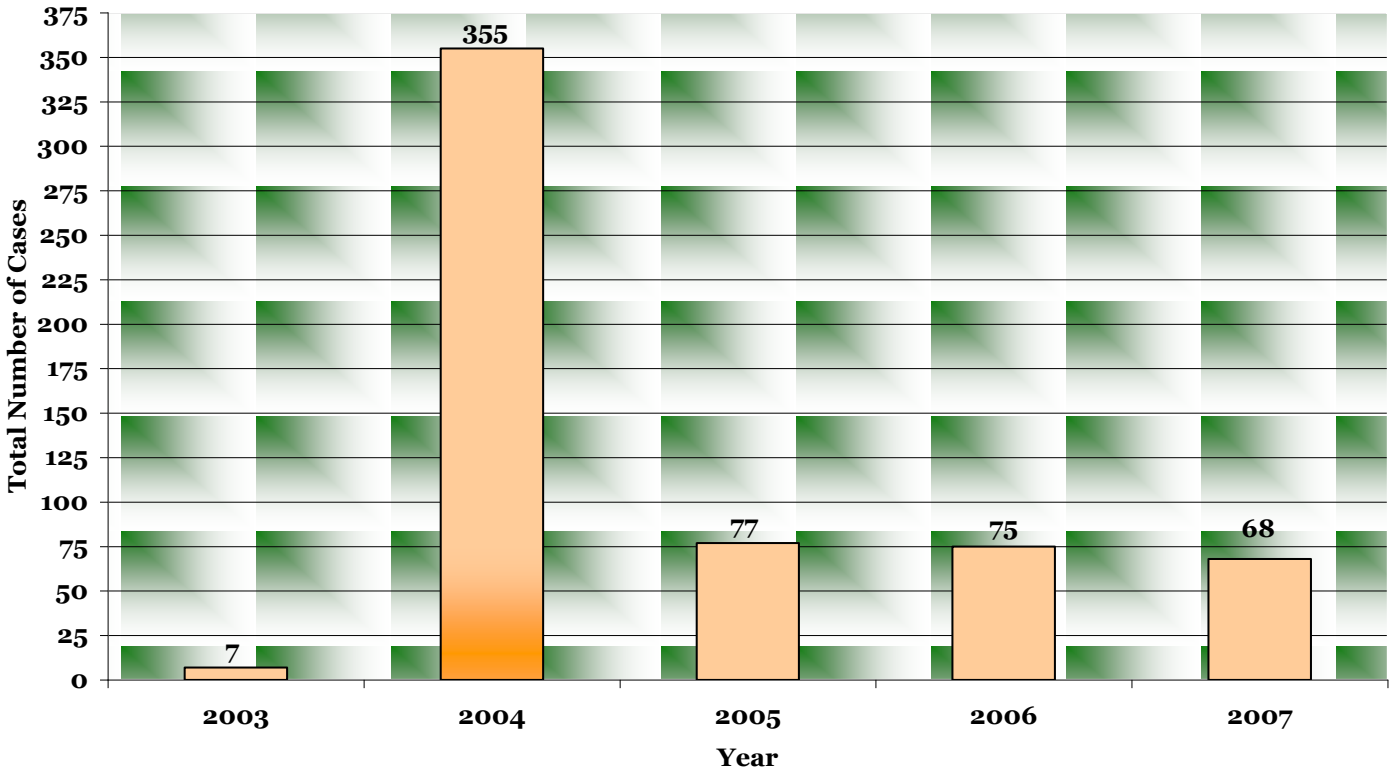
Meningitis: Arboviral meningitis is characterized by fever, headache, stiff neck, and pleocytosis (elevated white blood cell count in cerebrospinal fluid).

Encephalitis: Arboviral encephalitis is characterized by fever, headache, and altered mental status ranging from confusion to coma with or without additional signs of brain dysfunction (e.g., paresis or paralysis, cranial nerve palsies, sensory deficits, abnormal reflexes, generalized convulsions, and abnormal movements).

Paralysis syndrome: The criteria applied to Maricopa County cases are: (1) laboratory confirmed acute WNV-infection; AND (2) Physician documented acute paralysis.

Viremic Donor: A person who donated blood and whose blood subsequently tested positive when screened for the presence of West Nile virus. Viremic donors are followed up by the blood agency to verify their infection with additional tests. Some viremic donors will remain -asymptomatic, but others will go on to develop symptoms.

West Nile Virus Cases in Maricopa County, 2003-2007



Lyme Disease

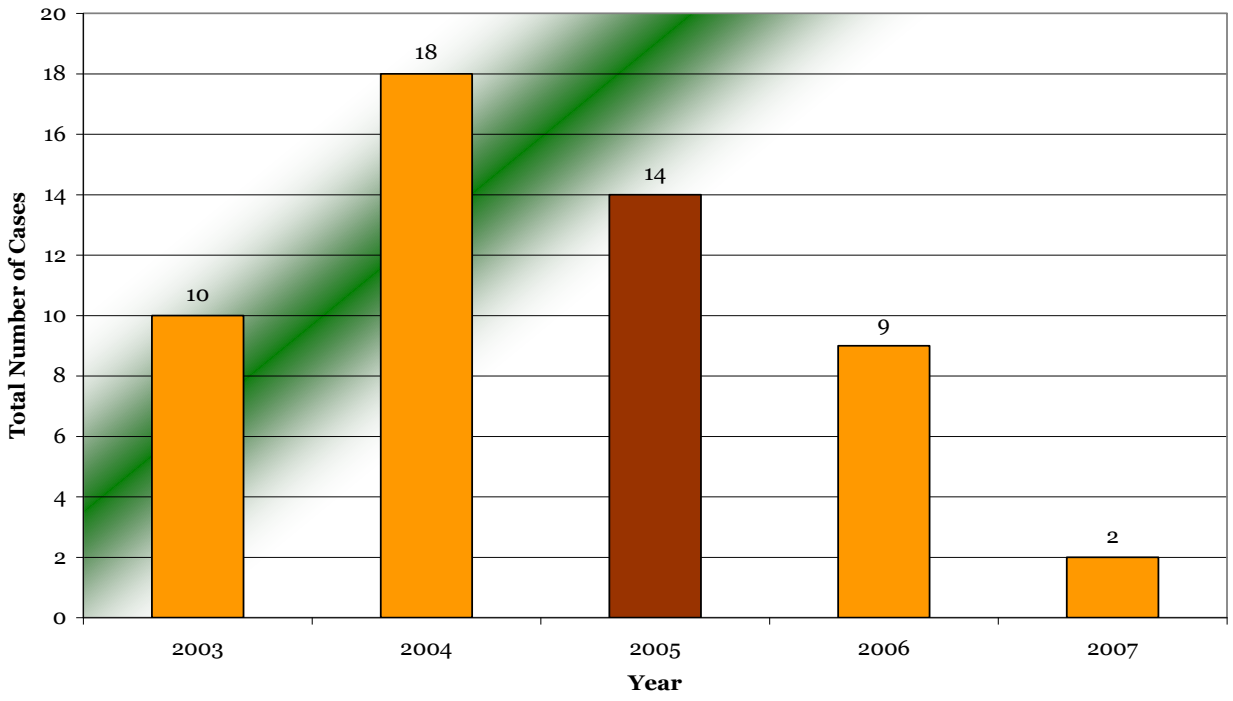
Lyme disease is the most common vector-borne disease in the United States. It is caused by the *Borrelia burgdorferi* spirochete which is transmitted to humans through bites from the black-legged tick. Early symptoms of infection include malaise, fatigue, fever, headache, stiff neck, myalgias, migratory arthalgias and lymphadenopathy. The best clinical marker is the *erythema migrans* which occurs in 60-80% of cases and is described as a large round red macule or papule often with a central clearing. Later manifestations may involve the musculoskeletal, nervous and cardiovascular systems if untreated. Early treatment with antibiotics such as doxycline, amoxicillin, or cefuroxime for 3 weeks usually recover completely.

In 2007, 12 states had incidences greater than 20 per 100,000 population. These states were Connecticut, Delaware, Maine, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, Vermont, and Wisconsin. Although Lyme disease is not present in Arizona, there are still cases in Maricopa County from residents who have traveled to an endemic area or relocated to Arizona from an endemic area. From 2003 and 2007, there were 167 suspect cases of Lyme disease reported to Maricopa County. Upon investigation, 53 cases were found to be probable or confirmed., shown in the figure below by year. All of these cases had travel to an area where Lyme disease is endemic.

The *erythema migrans* is the best clinical marker for diagnosing Lyme disease. It is often referred to as a target or bull's-eye.

" Although Lyme disease is not present in Arizona, there are still cases in Maricopa County from residents who have traveled to an endemic area or relocated to Arizona from an endemic area."

Lyme Disease in Maricopa County, 2003-2007

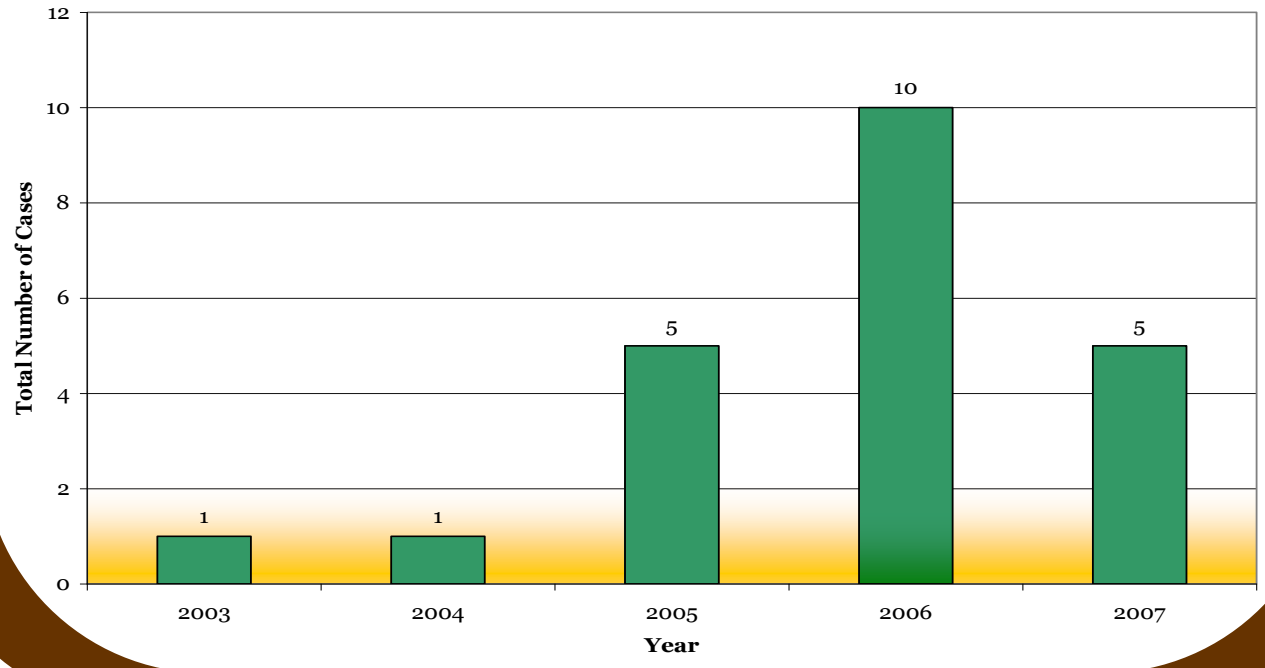


Dengue Fever

Dengue fever is an acute febrile viral disease that is transmitted through the bite of an infected mosquito, most commonly *Aedes aegypti.* The *Aedes aegypti* mosquito is a day biting mosquito that prefers to feed on humans and is present in states that border Mexico and other southern states such as Florida and Louisiana. Although the Aedes aegypti mosquito is present in Arizona, there have been no documented cases of Dengue transmission from these mosquitoes to date. Therefore, all cases of Dengue fever in Arizona have been acquired abroad. Dengue fever is found in most tropical and sub-tropical environments and has become the most common arboviral disease of humans. Four subtypes of the virus are known to exist and while exposure to one subtype does provide immunity to that subtype it does not provide immunity to the other three. Therefore, an individual may contract Dengue up to four times, once with each of the subtypes. Symptoms include an acute sudden onset of high fever which may be accompanied by a frontal headache, retro-orbital pain, myalgias, arthralgias, nausea, vomiting, and a maculopapular rash which typically lasts for one week. Malaise, weakness, and anorexia may also accompany this disease lasting for several weeks. In some cases the disease may progress to Dengue hemorrhagic fever in which symptoms of circulatory failure and hemorrhagic manifestation present usually around the time the fever begins to subside. The average case fatality rate of Dengue hemorrhagic fever is currently about 5%. While epidemics have occurred in the Americas for over 200 years, it is in the past 20 years that Dengue transmission and epidemics have increased greatly.

From 2003 and 2007, there were 47 suspect cases of Dengue fever reported to Maricopa County. Upon investigation, 22 cases were found to be confirmed or probable, with a peak year in 2006 in which there were 10 cases, shown in the figure below by year. All of these cases were acquired while visiting countries outside of the United States.

Dengue Fever in Maricopa County, 2003-2007



Taeniasis/Cysticercosis

Taeniasis is an infection with the cestodes *Taenia saginata* (beef tapeworm) or *Taenia solium* (pork tapeworm). Transmission is through the consumption of raw or undercooked beef or pork. *T. saginata* has a worldwide distribution but is more common in areas with poor sanitation. *T. solium* is less common in the United States except in areas with high immigration rates from countries such as Mexico, Latin America, the Iberian Peninsula, the Slavic countries, Africa, India, Southeast Asia, and China. Taeniasis may develop into cysticercosis which is the major concern with *T. solium* infection and the resulting signs and symptoms vary depending on the location and number of cysticerci in the patient. In the muscles cysticerci are relatively benign and may lead to the presence of lumps under the skin. Cysticerci in the eyes may lead to blurry or disturbed vision along with swelling or detachment of the retina. Cysticerci may also invade the CNS (nerocysticercosis) and may present with a lack of attention, seizures, headaches, confusion, hydrocephalus, and death. With non-cysticercosis taeniasis *T. saginata* infection may cause mild abdominal symptoms and occasionally appendicitis or cholangitis from migrating proglottids. Non-cysticercosis infection with *T. solium* is less frequently symptomatic. Treatment for taeniasis is with a single dose of praziquantel. Cysticercosis should be treated with a combination of albendazole, steroids, and anti-seizure medications. Surgical resection may be indicated depending on the location of the cysts.

From 2003 and 2007, there were 22 suspect cases of Taeniasis reported to Maricopa County. Upon investigation, 15 cases were found to be confirmed or probable. The majority of cases were infected by consuming undercooked pork while residing in or vacationing in Mexico.

Hantavirus Pulmonary Syndrome

Hantavirus Pulmonary Syndrome (HPS) was first identified in 1993 in the Four Corners region of the Southwest. HPS is an acute zoonotic viral disease characterized by fever, myalgias and GI complaints, followed by the abrupt onset of severe acute respiratory distress and hypotension. The virus is transmitted to humans when they breathe in dried materials that have been contaminated by rodent urine, feces or saliva. For this reason individuals should avoid sweeping or vacuuming to prevent stirring up the dried contaminated materials. The best way to prevent the spread of HPS is through rodent control and using a bleach solution to effectively deactivate the virus when cleaning rodent infestations. There is no cure for HPS, so treatment is supportive only, consisting of intubation and oxygen therapy to help get the patient through the period of severe respiratory distress. The earlier the patient is brought in to intensive care, the better.

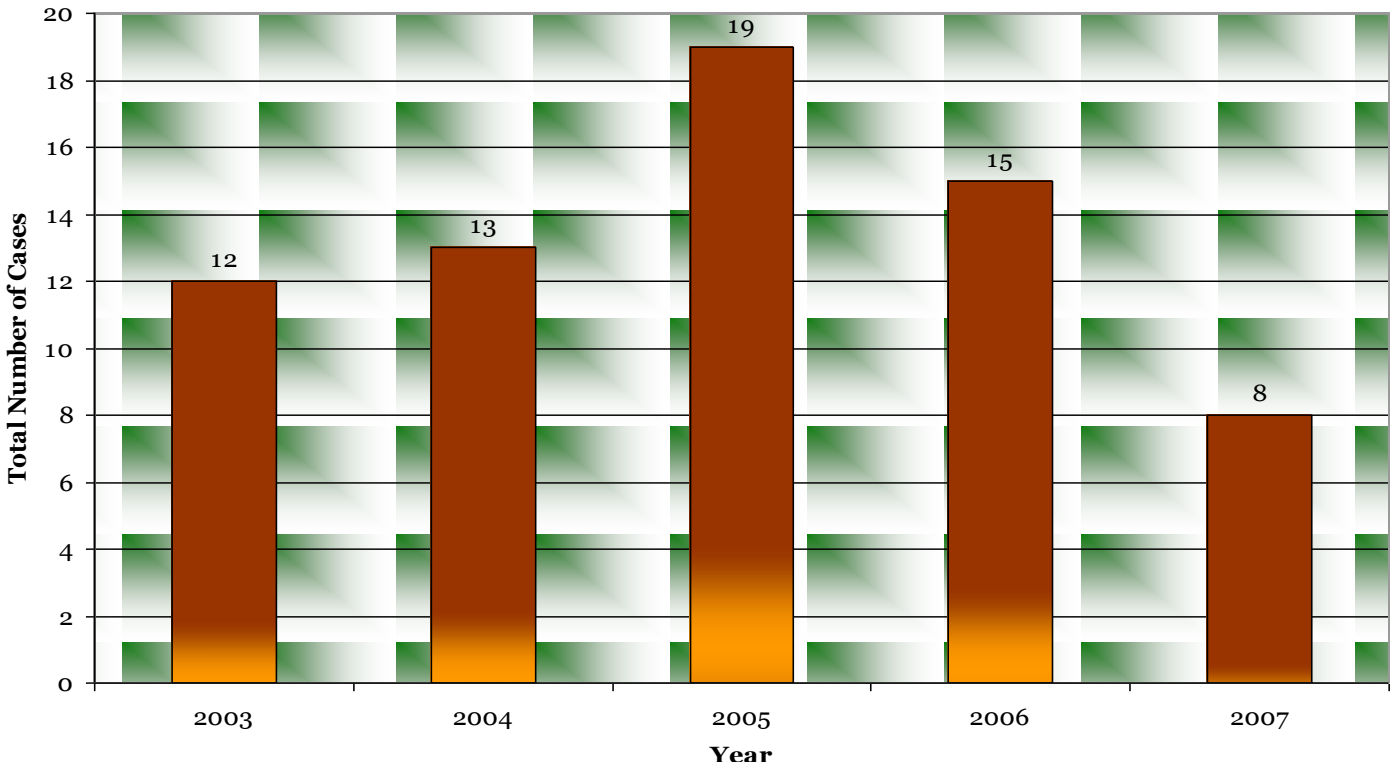
From 2003 and 2007, there were 41 suspect cases of HPS reported to Maricopa County. Upon investigation, four cases were confirmed. The four cases were all male and ranged in age from 24 to 60. One case occurred in 2004 and three in 2006 and only one survived. The case in 2004 was exposed in a ranch house in the Northwest valley where he spent half of his time. The house was found to have rodent nests and droppings when inspected. In 2006 the first case was also exposed in the Northwest Valley where he had participated in extensive cleaning of rodent droppings and trapping for several months. In the other two cases, the exact location of exposure could not be determined after conducting an extensive investigation.

Malaria

Malaria is a parasitic infection with one or more of the 4 types of *Plasmodium*. Although Malaria has been eliminated in the Unites States since the early 1950's, cases are still reported in immigrants or travelers returning from malaria-endemic areas. Also, the two species of *Anopheles* that were responsible for *Plasmodium* transmission prior to elimination are still widely present throughout the United States which implies a constant risk for reintroduction of this disease. Transmission is through the bite of an infective female *Anopheles* mosquito. Because the parasite can be found within red blood cells the disease may be transmitted through blood transfusion, organ transplant surgery, shared usage of needles or from mother to infant before or during birth. Symptoms of malaria include fever and flu-like illness which may present with chills, headaches, muscle aches, and tiredness. Other symptoms of malarial infection include nausea, vomiting, and diarrhea. Jaundice may develop in some cases and if not treated properly, *Plasmodium falciparum* infection may lead to mental confusion, seizures, coma, kidney failure, or death. Proper pre-exposure prophylaxis can reduce or eliminate the possibility of contracting malaria when traveling to endemic areas. If malaria is contracted current treatment varies depending on the species. *P malariae, P vivax, P ovale*, and drug sensitive *P falciparum* may be treated with chloroquine. Resistant strains of *P falciparum* and *P knowlesi* should be treated with quinine sulphate plus doxycycline.

From 2003 and 2007, there were 85 suspect cases of Malaria reported to Maricopa County. Upon investigation, 67 cases were found to be confirmed or probable, shown in the figure below by year. All of these cases were acquired while visiting countries outside of the United States.

Malaria Cases in Maricopa County, 2003-2007



Q Fever

Q Fever is an acute febrile disease caused by the bacterium Coxiella *burnetii* which is found world-wide primarily in sheep, cattle, and goats, but can be found in other domesticated pets and livestock. Although the majority of infected animals are asymptomatic, the bacteria is found in high concentrations in tissues of infected animals, particularly placental tissues. The bacteria is most commonly transmitted to humans through consumption of unpasteurized dairy products, direct contact with infected animals or other contaminated materials (i.e., wool, straw, fertilizer) or inhalation of dust contaminated with bacteria particles, which can be carried downwind for a distance of one kilometer or more. Groups that are at most risk include veterinarians, meatpacking workers, sheep workers and farmers. Only about 50% of those infected with Q Fever show symptoms. Symptom onset is usually sudden and occurs typically 2-3 weeks after becoming infected, but can range from 3-30 days. Symptoms include high fevers (104-105° F), severe headache, chills, malaise, myalgia, confusion, sore throat, chills, non-productive cough, nausea, vomiting, diarrhea, abdominal pain, chest pain and severe sweats. About 30-50% of symptomatic cases will develop pneumonia and some will develop hepatitis. A frequently prescribed treatment for Q Fever is doxycycline at a dose of 100 mg orally twice daily for 15-21 days.

From 2003 to 2007, there were 74 suspect cases of Q Fever reported to Maricopa County. Upon investigation, four cases were probable and three were confirmed. In 2003 there was one probable case of Q Fever in a female with unknown exposure. In 2004, there were two probable cases of Q Fever in a female veterinarian that had recent exposure to cattle during a trip to Mexico and a male with unknown exposure and one confirmed case in a male with a recent history of consuming unpasteurized cheese in Mexico. In 2006 there were two confirmed cases in a female with a recent history of consuming unpasteurized cheese in France and a female who lived on a farm and had recently participated in several deliveries of lambs and was exposed to placenta tissues. In 2007 there was one probable case of Q Fever in a male with a recent history of consuming unpasteurized cheese in Mexico.

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